

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(175/41.ccls.) and whip\$3 and (tool or bha) same bounce\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:05
L2	1	(wellbore or borehole or (oil same well) or drill\$3) and whip\$3 and (tool or bha) same bounce\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:06
L3	2906581	drill\$3 same string same whip\$3 sane control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:52
L4	18	drill\$3 same string same whip\$3 same control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:38
L5	2906561	oil same well and drilling and drill\$3 same string same whip\$3 sane control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:52
L6	2906554	oil same well and drilling and drillstring same whip\$3 sane control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:53
L7	0	oil same well and drilling and drillstring same whip\$3 same control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:53
L8	0	oilwell and drilling and drillstring same whip\$3 same control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:53
L9	0	oilwell and drilling and drill and string same whip\$3 same control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:53
L10	18	drill and string same whip\$3 same control\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 16:53
L11	5	("5448227" "5201292" "6205851" "5864058" re34435).pn.	US-PGPUB; USPAT; USOCR	OR	ON	2006/03/02 17:07
L12	10646	control\$4 same drill\$3 same operation\$3	US-PGPUB; USPAT	OR	ON	2006/03/02 17:08
L13	25	control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop	US-PGPUB; USPAT	OR	ON	2006/03/02 17:09
L14	18	mwd and tool and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop	US-PGPUB; USPAT	OR	ON	2006/03/02 17:10
L15	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop	US-PGPUB; USPAT	OR	ON	2006/03/02 17:28

## EAST Search History

L16	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor	US-PGPUB; USPAT	OR	ON	2006/03/02 17:29
L17	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis	US-PGPUB; USPAT	OR	ON	2006/03/02 17:29
L18	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display	US-PGPUB; USPAT	OR	ON	2006/03/02 17:29
L19	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator	US-PGPUB; USPAT	OR	ON	2006/03/02 17:30
L20	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation	US-PGPUB; USPAT	OR	ON	2006/03/02 17:30
L21	5	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation and speed	US-PGPUB; USPAT	OR	ON	2006/03/02 17:31
L22	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed	US-PGPUB; USPAT	OR	ON	2006/03/02 17:31
L23	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration	US-PGPUB; USPAT	OR	ON	2006/03/02 17:36

## EAST Search History

L24	397143	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and work station	US-PGPUB; USPAT	OR	ON	2006/03/02 17:32
L25	1	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and workstation	US-PGPUB; USPAT	OR	ON	2006/03/02 17:32
L26	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce	US-PGPUB; USPAT	OR	ON	2006/03/02 17:37
L27	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit	US-PGPUB; USPAT	OR	ON	2006/03/02 17:40
L28	11	("3497019"   "4662458"   "4695957"   "4794534"   "4854397"   "4972703"   "5064006"   "5163521"   "5230387"   "5250806").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/03/02 17:39
L29	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/02 17:48

## EAST Search History

L30	96	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn.	USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/02 17:47
L31	49	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn.	US-PGPUB; USPAT; USOCR	OR	ON	2006/03/02 17:48

## EAST Search History

L32	0	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit	US-PGPUB; USPAT; USOCR	OR	ON	2006/03/02 17:48
L33	4	mwd and tool and orthogonal same accelerometer\$3 and control\$4 same drill\$3 same operation\$3 and bit and bha and whirl and closed same loop and sensor and analysis and display and operator and rotation same speed and vibration and stick-slip and bit same bounce and drill same bit	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/02 17:48

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	9	("5448227" "5201292" "6205851" "5864058" re34435).pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/02 16:56
S2	90	("5448227" "5201292" "6205851" "5864058" re34435)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/02/27 16:54
S3	14	("5448227" "5201292" "6205851" "5864058" re34435) and sensor same orthogonal	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/02/27 16:55
S4	10	("5448227" "5201292" "6205851" "5864058" re34435) and sensor same orthogonal and bha	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/02/27 16:56
S5	7	("5224201"   "5303203"   "5375098"   "5842149"   "5864058"   "5924499"   "5941305").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/02/27 17:01
S6	0	(schoepfel).in. and hydrogen same inject\$4	US-PGPUB; USPAT	OR	ON	2006/02/27 17:02
S7	33	(schoepfel).in.	US-PGPUB; USPAT	OR	ON	2006/02/27 17:05
S8	36	hydrogen same injector same motor	US-PGPUB; USPAT	OR	ON	2006/02/27 17:19
S9	0	bha same axis same vibrational and wabble and workstation	US-PGPUB; USPAT	OR	ON	2006/02/27 17:20
S10	0	bha same axis same vibrational and workstation	US-PGPUB; USPAT	OR	ON	2006/02/27 17:20
S11	4	bha same axis and workstation	US-PGPUB; USPAT	OR	ON	2006/02/27 17:20
S12	70	175/41.ccls.	US-PGPUB; USPAT	OR	ON	2006/03/02 16:37

## EAST Search History

S13	96	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/02/28 12:18
S14	49	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn.	USPAT	OR	ON	2006/02/28 12:20
S15	21	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and drill and tool and control	USPAT	OR	ON	2006/02/28 16:15

## EAST Search History

S16	27	("0671386"   "0748559"   "1364508"   "1515378"   "1719757"   "2387391"   "3572215"   "3720188"   "3745887"   "3771419"   "4262579"   "4278050"   "4395881"   "4395885"   "4509464"   "4539894"   "4693087"   "4910963"   "5048497"   "5372483").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2006/02/28 14:12
S17	21	("6152246" "6438495" "5451164" "5551881" "6732052" "6337657" "5646611" "6148912" "6189612" "6378363" "6079505" "5812068" "6108268" "6272434" "5058077" "6196335" "5930731" "4845628" "4504727" "4903245" "5181419" "5197018" "5303203" "5881310" "6097785" "4350979" "4531189" "4551766" "4760735" "4794534" "4794535" "5212645" "5275040" "5286947" "5511037" "5548115" "5602334" "5984023" "5992519" "6003620" "6035701" "6142228" "6178815" "6220371" "6220371" "6266619" "6317700" "6343507" "6356844" "6473696").pn. and drill and tool and control	USPAT	OR	ON	2006/02/28 16:16